

REMARKS

Overview

In the Office Action under reply, claims 1-15, 18, 19, and 21-35 are pending, claims 16, 17, and 20 having been canceled previously. Claims 1-19 and 21-35 are rejected under 35 U.S.C. §103 as unpatentable over Zampini et al., 2003/0027077 ("Zampini") in view of Fedynyshyn, US 6,468,712 ("Fedynyshyn"). Applicants note that claims 16 and 17, identified as rejected on Page 2 of the Action, are no longer pending for having been previously canceled. The rejection is traversed for at least the reasons set forth below.

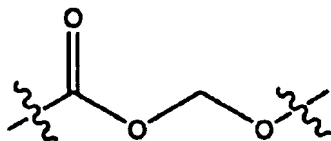
Claim amendments

With the amendment made herein, claim 1 has been amended to recite "...baking the exposed film at a post-exposure bake temperature below about 100 °C..." Support for this amendment can be found, for example, in claim 1 as originally filed.

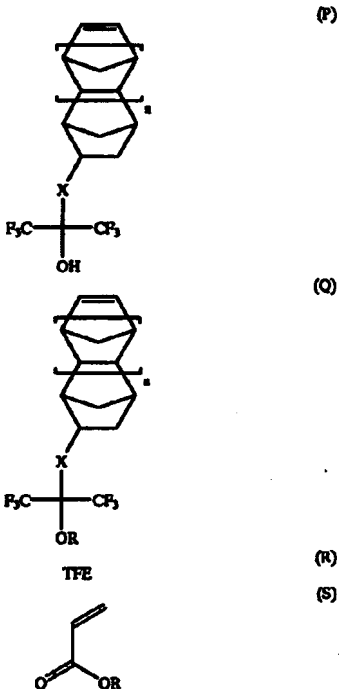
Rejection under 35 U.S.C. §103(a)

Claims 1-15, 18, 19, and 21-35 stand rejected under 35 U.S.C. §103(a) as unpatentable over Zampini in view of Fedynyshyn. This rejection is traversed.

Claim 1 (in part) requires coating a substrate with a film of a photoresist composition comprised of "a polymer that is rendered soluble in aqueous base at a temperature of less than about 100 °C by acid-catalyzed deprotection of pendent acetal- or ketal-protected carboxylic acid groups" (emphasis added). Representative monomers suitable for preparing such polymers are provided in paragraph [00095] of the original specification. Each of the monomers comprises an acetal- or ketal-protected carboxylic acid group, i.e., each of the monomers comprises the following fragment:



The Examiner cites Zampini at "paragraphs [0041]-[0043] which discloses the preferred monomer groups as follows:"



In the formulae (P) and (Q), X is $(-\text{CH}_2-)_p$ where p is zero, 1, or 2, or $-\text{OCH}_2-$ or $-\text{CH}_2\text{O}-$. In formula (R), TFE is tetrafluoroethylene. In formula (S), R is hydrogen or optionally substituted alkyl. Although formulae (P) and (Q) may have ketal groups, none of the compounds of formulae (P)-(S) comprise an *acetal- or ketal-protected carboxylic acid group*, as required by the pending claims. In fact, applicants can find no instances within Zampini of acetal- or ketal-protected *carboxylic acid* groups.

The Examiner states that Fedynyshyn discloses "post-exposure bake at temperatures as recited in column 22, lines 4-12 wherein the range is from 'about 50 °C to about 160 °C'," and that it would have been obvious to perform a post-exposure bake on the photoresist of Zampini according to the methods of Fedynyshyn. Regardless of whether Fedynyshyn teaches post-exposure baking, however, Zampini does not teach a process for patterning a substrate by coating the substrate with a film of a photoresist composition comprised of a polymer that is rendered soluble in aqueous base at a temperature of less than about 100°C by acid-catalyzed deprotection of pendent acetal- or ketal-protected carboxylic acid groups, as required by claim 1. Furthermore, Fedynyshyn also does not teach the use of a polymer that is rendered soluble in aqueous base by acid-catalyzed deprotection of pendent acetal- or ketal-protected carboxylic acid groups. Since a rejection under 35 U.S.C. §103 requires that the reference(s) teach or suggest all of the claimed

limitations (see MPEP §2142), the Examiner has failed to meet the requirements for a *prima facie* case of obviousness over the combination of Zampini and Fedynyshyn. Applicants therefore respectfully request withdrawal of the rejection.


Previous Rejection of the Claims

Applicants note that, in the Office Action mailed on September 19, 2006, claims 1-19 and 21-35 were rejected under 35 U.S.C. §102(e) as anticipated by Zampini. In applicants' reply dated December 4, 2006, claim 1 was amended to recite a post-exposure bake temperature of less than about 70 °C. With the amendment set forth herein, claim 1 has been amended to recite a post-exposure bake temperature of less than about 100 °C. In light of the arguments set forth above, Zampini clearly does not anticipate the pending claims, as there is no mention within the disclosure of Zampini of a polymer comprising an acetal- or ketal-protected carboxylic acid group.

CONCLUSION

Applicants submit that the claims of the application are in condition for allowance. Applicants respectfully request withdrawal of the rejections, and prompt issuance of a notice of allowance. If the Examiner has any questions concerning this communication, or would like to discuss the application, the art, or other pertinent matters, a telephone call to the undersigned would be welcomed.

Respectfully submitted,

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